

Additional Exercises for Activity

These are new requirements sent by the CFO.

- a) Assume the bank also wants to hedge part of the risk coming from stock markets in Asia. To achieve this, the bank employs the following model:

$$I_t = \alpha + \beta_1 F_t + \beta_2 FA_t + \varepsilon_t.$$

In the above equation, I is the one-week return of a given portfolio, F is the one-week return of the e-mini S&P 500 futures contract, FA is the one-week return on the Nikkei 225 USD futures, and the last term is the error term in the regression. How many contracts (e-mini and Nikkei futures) are required to hedge each portfolio? (Remember: you need to find the multiplier of the Nikkei futures contract from the CME website) Provide a table in which you give the parameters of each regression (intercept, slopes, R^2 , and t-stats for the slope parameter).

- A. Instead of hedging each portfolio individually, determine the optimal hedging strategy of the portfolio. To do this, first compute the one-week return for the total value of the portfolio (this is done by computing the weighted average return using individual weekly returns) and then run the regression using all futures as explanatory variables. Compare the optimal strategy that you obtain to those in **A.c.** Compare also the total value required for opening the futures position.
- B. Based on the results in A and B, provide a recommendation about the best hedging policy for TQM.